Memorandum by Dr. Bowman Cutter

Date: **September 9, 2004**

TO: **SCAG WATER POLICY TASK FORCE**

FROM: **BOWMAN CUTTER**

SUBJECTS: **On-Site Stormwater BMPs and Financing Update**

1. ON-SITE STORMWATER BMPs

Several new developments have occurred which make incentive-based implementation of on-site BMPs more likely. (By on-site BMPs I mean ones that would collect runoff from typical residential, commercial, and industrial parcels rather than serving a drainage area as a whole.) The Santa Monica Bay bacteria TMDL plan seems like it will include on-site BMPS in its implementation plan – and financial incentives for these BMPs were discussed at the last workshop. Also, Orange County is contemplating adding a storm water utility fee. Stormwater utilities are an ideal structure for setting up financial incentives for on-site stormwater management. Finally, an EPA team is investigating options for incentive-based, on-site, runoff control and is interested in exploring the ideas in Southern California.

There are two separate questions involved in the decision to implement small-scale runoff solutions: 1) cost effectiveness vis-à-vis larger, regional scale, projects; and 2) the method to implement on-site solutions. Options for implementing additional on-site capacity include building code regulation, tradable stormwater permits, and an auction format I will discuss below.

The desirability of on-site stormwater BMPs (i.e. rain gardens, rock wells, leach fields, cisterns, etc.) –no matter the method used to implement them- is enhanced by the likely large costs of constructing public treatment or detention facilities. Studies by Caltrans and others have demonstrated that treatment costs for any significant fraction of stormwater runoff is likely to be very expensive. Public detention or diversion is also likely to be very expensive given land costs in much of Southern California. Though there are likely some low-cost public infrastructure solutions, these low-hanging fruit will disappear quickly. *The high cost of public infrastructure implies that we should seek out possibilities for developing private capacity where the costs of development are lower than the cost of building additional public infrastructure*.

Flexibility is another advantage of small-scale solutions. It is uncertain how much control and treatment will be necessary to comply with the TMDLs in development and implementation. Since these TMDLS incorporate long implementation time horizons there is space for experimenting with different options. A difficulty with jumping straight to large, public infrastructure options is that they have large fixed costs so that, once installed, there is a high cost to increasing their capacity, but building too much capacity initially would be very wasteful. On-site capacity is ideal for use as a first step in TMDL implementation because capacity can be gradually added, and if it turns out there is too much on-site capacity, contracts could be allowed to lapse and capacity could be decreased.

However, it is difficult to say a priori how expensive it would be to persuade land-owners to install and maintain stormwater BMPs. The actual construction and maintenance costs are fairly well-known. However, these costs would be much less than average if, for example, the landowner built the BMP in the course of on overall landscaping effort. The cost to the landowner of dedicating a certain portion of the lot to a stormwater BMP is much more difficult to estimate. The market value of the land could be a decent approximation, but might not be accurate. For example, BMPs such as rain garden might not take up any more land than landscaping that the owner would install in any case. On the other hand, a landowner might value a portion of the site at higher than the market land value for aesthetic reasons. This *opportunity cost of land* is something that cannot be known until site owners are given the opportunity to decide at what price (or cost avoided) they would be willing to install the BMP. To a lesser degree the construction costs to a particular landowner are difficult to ascertain as well. An incentive-based regulatory structure is well-suited to take advantage of these uncertainties because it gives the landowners the opportunity to signal their own valuation of costs.

There are several practices used nationwide to induce landowners to add onsite capacity. The most common method to induce landowners to install stormwater BMPs is to add requirements for detention/retention capacity to building codes and construction permits. Another method is to build credits (fee rebates) for detention capacity into a stormwater utility fee. A new proposed option is to run an auction where private landowners would bid for a subsidy (lowest bids win) to add detention/retention capacity. Tradable stormwater permits are a final option for on-site control, but for a variety of reasons they may be inappropriate in Southern California and I will not discuss them in this memo.

Building Code and Construction Regulation

Building code regulation generally only affects new construction or redevelopment. In much of coastal Southern California the majority of land has already been developed and there is a limited amount of redevelopment. Therefore, regulations applying only to new or redevelopment are unlikely to apply to a large percentage of parcels for some time. It is possible that new regulations could be promulgated to require some portion of existing development to put in place detention/retention capacity. The benefits of this approach are that the additional capacity would come at little additional public costs.

However, this approach could run into legal difficulties in that it could be argued that existing landowners have the right to allow stormwater to runoff their properties. A more subtle failing is that such regulation would not distinguish between landowners who can install additional control capacity cheaply and landowners who would face high costs of installation. Because many landowners might face high costs of installation and/or maintenance; monitoring and enforcing the new regulations would be difficult.[1] A final negative aspect of this approach is that new costly regulations will create an incentive for developers to place their projects elsewhere, thereby further decreasing parcel turnover.

Fee/Credit Programs

The next two options (fee/credits and subsidy auctions) are designed to add stormwater control capacity through the use of decentralized economic incentives. These instruments differ in important ways, but they are similar in that they rely on increasing the financial rewards to landowners for voluntarily building stormwater control infrastructure. An incentive-based implementation would find those landowners with low opportunity costs of land or those who can construct BMPs cheaply because they are the ones who would tend to use credits or submit the lowest bid in auctions. In other types of pollution control, economists have found that private parties will find cheaper than expected pollution control options when they are motivated by a well-designed incentive structure. A recent paper (Thurston 2004) shows that decentralized, on-

[1] For this reason, some cities (Austin, Texas is one example) have fee in-lieu-of programs that allow developers to pay a fee rather than install BMPs.

site control, could offer cheaper stormwater control than large public projects in the case of Cincinnati.

Another benefit of an incentive-oriented approach is that landowners who have low control costs and volunteer are much more likely to follow-through on their commitments and therefore the problems of monitoring and enforcing the maintenance and upkeep of stormwater BMPs is likely to be less than with mandatory solutions such as building codes.

Nationwide, many cities and counties have stormwater utility fees where landowners pay a fee based on estimated runoff as a function of parcel size, land use, and/or impermeability. Because the fee amount is based on the amount of stormwater runoff from the parcel, it is natural to include credits for landowners who install detention/retention capacity. These credits are usually a function of both the volume of stormwater detained and the peak flow reduction.

The stormwater fee/credit system has the advantage that, taken together, it generates revenue for the responsible city or county. In addition, credits provide financial incentives for those who pay stormwater fees to put in detention capacity. Credits also enhance the perceived fairness and equity of a stormwater utility fee and are often part of the plan to achieve public acceptance of a new stormwater utility.

Credits on their own, however, seldom provide sufficient incentive to mobilize a significant amount of new private detention capacity. Stormwater fees are generally so low that even a 100% credit does not do much to defray the cost of a stormwater BMP. The cities I have been able to contact have had very few landowners take up the credit option.[2] Stormwater fees would have to be significantly higher and credit options more streamlined and better publicized for a pure stormwater credit option to recruit a significant amount of additional on-site capacity.

Stormwater Auctions

Stormwater auctions would motivate private participation in stormwater detention by giving out subsidies for BMP construction and possibly maintenance. An auction would be held where the lowest bids (in terms of dollars per a combination of total and peak runoff control) for the construction of standard BMP designs would be reviewed by city engineers and, if approved,

[2] Most cities with credit/fee programs are more concerned with volume than quality problems and are reluctant to rely on private detention to solve flooding problems. Stormwater engineers worry that the "carrot" of a small yearly credit on the stormwater fee will not be enough to ensure continued upkeep of a stormwater BMP. Of course

win the subsidy. The contract would be for a specified amount of time and contingent on proper maintenance or perhaps include an easement to allow the city to perform maintenance. Auctions could also be targeted towards hot spots where stormwater control would be more effective at controlling pollution or where large scale options are difficult or expensive to place. The EPA team which is examining on site control is working toward implementing an auction-based approach to on-site stormwater management.

Stormwater auctions and credit/fee programs would need public funds. However, if they are able to provide detention capacity at a lower price than public infrastructure options the additional money would be well spent. Stormwater utility fee credits and stormwater BMP auctions could also be coordinated by having the subsidy consist of first a credit against the utility fee and a possible additional subsidy on top of the credit.

There are a number of implementation decisions on stormwater credits or auctions that are the province of the local government, such as:

- Eligibility: i.e., commercial/industrial properties, public agencies, and residential property owners. The city or county would need to decide their capacity for ensuring maintenance for different types of land-uses and sizes of parcels.
- Maintenance: Local government or landowner?
- BMP design specification.
- Length of contract/terms.

Summary

On-site, private, stormwater solutions may provide significant cost-effectiveness and flexibility advantages over large public infrastructure solutions-particularly in already-developed areas. However, it is not clear how to tap into this capacity. Standard changes in building and land use codes will not fully take advantage of opportunities for on-site stormwater control. Credits against stormwater utility fees or subsidies in the form of BMP auctions are two encouraging possibilities. I (and an EPA team) view BMP auctions, perhaps combined with a credit, as the most promising idea. However, there are many decisions each city or county will have to consider to tailor the auction approach to their situation.

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with higher fees and therefore larger credits, the financial incentive might be high enough to ensure continued upkeep of BMPs.

2. UPDATE ON STORMWATER-RELATED FINANCE ISSUES

Several recent developments reveal new possibilities for financing stormwater programs. Orange County is in the very preliminary stages of considering a stormwater utility fee. Also, a bill to place a $6 fee on automobile registration to fund stormwater programs in Northern California presents an interesting new financing possibility. Finally, a case involving Proposition 218's property-related fees was decided in local governments' favor.

Various reports indicated that some Orange County local government entities are considering a stormwater utility fee. This appears to be one of several financing options under discussion rather than an actual proposal. There has been no detailed staff work on a stormwater utility fee and a proposal will have to wait until it is clear which jurisdictions would participate. Separately, the Orange County Business Council and Cal State Fullerton polled Orange County residents on a possible stormwater fee and found 59.3 percent would pay $5/month. This is below the two-thirds threshold for a vote of the entire electorate, but it is also on the high end of stormwater utility fees.

Two bills advanced in the legislature to increase funding for stormwater runoff programs. ACA 10, advanced by Assembly Member Harman, would have excluded stormwater runoff fees from the voter approval requirements of Proposition 218. However, this bill received little support from either party and was placed in the inactive file. Another interesting bill is Assembly Member Nation's A.B. 204, which would have allowed nine bay area counties to place a $6 increase on vehicle registration fees in their area to fund stormwater runoff mitigation activities. It did not make it all the way through the legislature this session, but it is an interesting financing possibility that members of the task force may want to consider.

The Proposition 218 definition of a property-related fee as it relates to stormwater fees is still a somewhat open legal question despite the adverse decision in the *Salinas* case, 98 Cal.App.4th 1351 (2002). The decision in *Apartment Association of Los Angeles County, Inc. v. City of Los Angeles,* 24 Cal. 4th 830 (2001) indicated that the key test is whether the fee could be avoided without selling the property ("voluntariness" test). This reasoning was confirmed by the California Supreme Court in *Richmond v. Shasta Community Services District,* 32 Cal. 4th 409 (2004). The *Richmond* case considered water capacity and connection fees and found that they are not property related if the fees are contingent on the property owner voluntarily seeking the service. This is distinct from charges such as monthly service charges for water services that might be deemed property-related fees. This decision leaves open the possibility that a well-constructed stormwater utility fee with a sufficiently voluntary nature would pass the "voluntariness" test-though of course any stormwater fee would likely be challenged if it is not subject to a vote.

These finance developments do not hold the promise of immediate new funds to assist local governments in meeting their stormwater mandates. However, task force members may want to consider whether to support legislative action along the lines of ACA 10 or A.B. 204. Particularly, a financing proposal along the lines of A.B. 204 would need substantial development and effort from task force members in order to craft a proposal for Southern California.